

## Variable Oxygen Regulator (VOR)

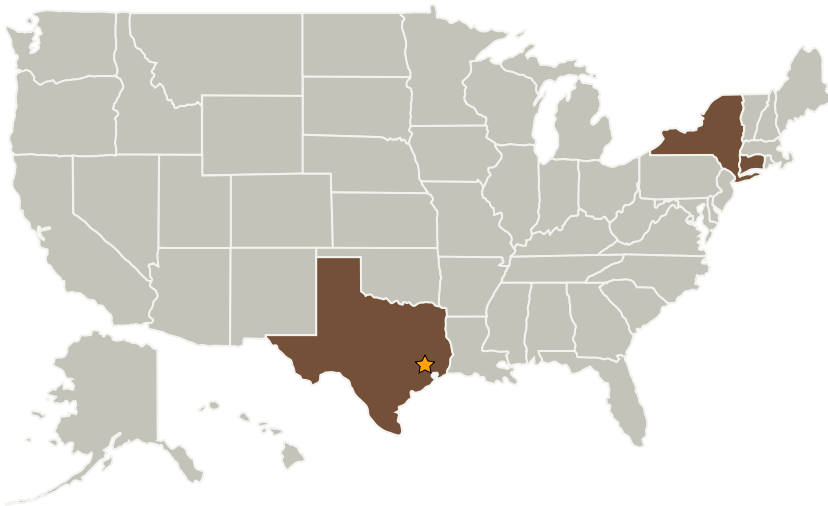
Completed Technology Project (2011 - 2015)



## Project Introduction

Our pressure regulator allows, for the first time, continuous control of suit pressure, resulting in higher levels of flexibility and safety for extra-vehicular activity. Pre-breath protocols could be performed within the suit, decreasing preparation time & allowing for more rapid deployment. The suit will have flexibility to integrate across various spacecraft and missions of the future, regardless of cabin pressure. The regulator has been designed with safety first. It is robust and tolerant of contamination. It will withstand combustion events and retain enough capability after failure to return an astronaut back to the spacecraft safely.

## Primary U.S. Work Locations and Key Partners



Variable Oxygen Regulators 2.0 Units 001 and 002 shortly after fabrication and prior to integration into the PLSS 2.0 Test Article

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Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
Connecticut	New York
Texas	

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## Images



### Variable Oxygen Regulator 3.0

Variable Oxygen Regulator (VOR) 3.0 with VOR Engineer Marlon Cox at time of hardware delivery (<https://techport.nasa.gov/image/143224>)



### Variable Oxygen Regulator mounted in a test cell at NASA's White Sands Test Facility

Variable Oxygen Regulator (center) undergoing oxygen compatibility and contaminant testing (<https://techport.nasa.gov/image/143236>)



### Variable Oxygen Regulators 2.0 Units 001 and 002

Variable Oxygen Regulators 2.0 Units 001 and 002 shortly after fabrication and prior to integration into the PLSS 2.0 Test Article (<https://techport.nasa.gov/image/143231>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Johnson Space Center (JSC)

### Responsible Program:

Game Changing Development

## Project Management

### Program Director:

Mary J Werkheiser

### Program Manager:

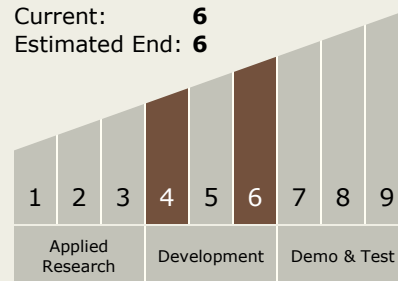
Gary F Meyering

### Principal Investigator:

Daniel J Barta

## Technology Maturity (TRL)

Start: 4  
Current: 6  
Estimated End: 6



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### Stories

Mission Usage Agreement for EVA Technologies  
(<https://techport.nasa.gov/file/164965>)

Technology Infusion Story for Variable Oxygen Regulator  
(<https://techport.nasa.gov/file/164958>)

### Links

Next Generation Life Support Project Status  
(<http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20140008286.pdf>)

### Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

### Target Destinations

Earth, The Moon, Mars